

FORM PTO - 1449

SUPPLEMENTAL INFORMATION  
DISCLOSURE STATEMENT

ATTORNEY DOCKET NO.: NNM-001 (7596/1)

APPLICANTS: Mayes and Tyler

SERIAL NO.: 09/308,166

FILING DATE: June 25, 1999

GROUP: 2754

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## U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
<i>Jan</i>	A1	3,966,510	06/29/76	Aonuma et al.			08/15/74
	A2	4,096,040	06/20/78	Grosko			03/25/77
	A3	4,269,826	05/26/81	Zimmermann et al.			12/12/77
	A4	4,672,040	06/09/87	Josephson			06/28/85
	A5	4,735,796	04/05/88	Gordon			05/07/85
	A6	4,778,671	10/18/88	Wusirika			07/14/86
	A7	4,814,098	03/21/89	Inada et al.			08/28/87
	A8	5,043,101	08/27/91	Gordon			03/29/88
	A9	5,328,681	07/12/94	Kito et al.			01/17/92
	A10	5,358,722	10/25/94	Monzyk			01/25/93
	A11	5,437,892	08/01/95	Nagayama et al.			08/31/93
	A12	5,491,219	02/13/96	Mann			06/11/93
	A13	5,505,996	04/09/96	Nagayama			04/11/95
	A14	5,543,226	08/06/96	Bobrich et al.			12/18/92
	A15	5,547,748	08/20/96	Ruoff et al.			01/14/94
	A16	5,552,072	09/03/96	Arase et al.			02/17/94
<i>✓</i>	A17	5,552,229	09/03/96	Brodt et al.			09/29/94

## FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG Y/N

## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)

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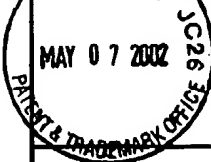
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SHEET 1 OF 2

FORM PTO - 1449

SUPPLEMENTAL INFORMATION  
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ATTORNEY DOCKET NO.: NNM-001 (7596/2)

APPLICANTS: Mayes and Tyler

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## U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
RA	A25	4,849,210	07/18/89	Widder			08/11/87
RA	A26	5,069,216	12/03/91	Groman <i>et al.</i>			09/19/89
RA	A27	5,338,617	08/16/94	Workinger <i>et al.</i>			11/30/92
RA	A28	5,512,332	04/30/96	Liberti <i>et al.</i>			04/22/94
RA	A29	5,690,903	11/25/97	Hainfeld			05/30/95
RA	A30	6,180,389 B1	11/30/01	Douglas			01/03/97

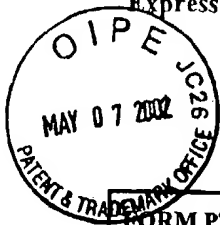
## FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
RA	B2	8800060 A1	01/14/88	PCT				N	N
RA	B3	0 525 199	02/03/93	EP				N	N
RA	B4	9305818 A1	04/01/93	PCT				N	N
RA	B5	0884739 A1	12/16/98	EP				N	N
RA	B6	9946782 A2	09/16/99	PCT				N	N

## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)	
RA	C7	Harris "The Production of Paracrystalline Two-Dimensional Monolayers of Purified Protein Molecules," Micron, Pergamon Press Ltd., United Kingdom, Vol. 13, No. 2, pgs. 147-168 (1982)
RA	C8	Matsunaga "Synthesis of Nano-Scale Ultrafine Particles Using Biomolecules," Kagaku (Kyoto), Vol 46, ISS. 7, pg. 498 (1991)
RA	C9	Meldrum <i>et al.</i> "Synthesis of Inorganic Nanophase Materials in Supramolecular Protein Cages," Nature, vol. 349, No. 21 (Feb. 1991)
EXAMINER		DATE CONSIDERED 2-24-2004

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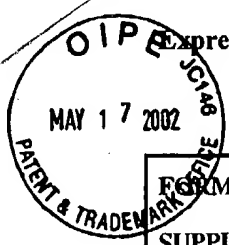
SHEET 2 OF 2

FORM PTO - 1449		ATTORNEY DOCKET NO.: NNM-001 (7596/2)	
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		APPLICANTS: Mayes and Tyler	
		SERIAL NO.: 09/308,166	
		FILING DATE: June 25, 1999	
		GROUP: 2754	
OTHER ART, JOURNAL ARTICLES, ETC.			
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)		
SA	C10	Bidan <i>et al.</i> "New Nanocomposites Based on Tailor Dressed Magnetic Particles in a Polypyrrole Matrix" Advanced Materials, VCH Verlagsgesellschaft, Weinheim, Germany Vol. 6, No. 2, pgs. 152-155 (Feb. 1, 1994)	
SA	C11	Xu <i>et al.</i> "Collapse of Apo- and Magnetoferritins at the Air-Water Interface," J Colloid Interface Sci, vol. 167, No. 2, pgs. 314-319 (1994)	
SA	C12	Gider <i>et al.</i> "Classical and Quantum Magnetism in Synthetic Ferritin Proteins" Journal of Applied Physics, American Institute of Physics, New York, Vol. 79, No. 8, pgs. 5324-5326 (April 15, 1996)	
SA	C13	Moskowitz, <i>et al.</i> "Determination of the Preexponential Frequency Factor for Superparamagnetic Maghemite Particles in Magnetoferritin," J. Geophys. Res., Solid Earth, American Geophysical Union, Vol. 102, No. B10 (1997)	
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U.S. PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME		CLASS	SUB CLASS	FILING DATE IF APPROPRIATE	

FOREIGN PATENT DOCUMENTS									
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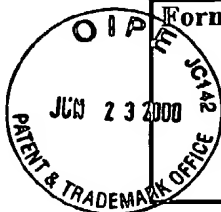
OTHER ART, JOURNAL ARTICLES, ETC.	
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)
<i>Per</i>	C14 Meldrum, "Nanoscale Synthesis in Organized Assemblies (Ferritin, Electron Transfer, Magnetotactic Bacteria)," University of Bath (United Kingdom) (1992).

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FORM PTO - 1449 SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				ATTORNEY DOCKET NO.: NNM-001 (7596/1) APPLICANTS: Mayes and Tyler SERIAL NO.: 09/308,166 FILING DATE: June 25, 1999 GROUP: 2754					
U.S. PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE		
<i>RU</i>	A20	6,162,532	12-19-00	Black <i>et al.</i>	—	—	07-31-98		
FOREIGN PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
<i>RU</i>	B1	0 977 182 A2	02-02-00	EP	—	—	07-21-99		Y
OTHER ART, JOURNAL ARTICLES, ETC.									
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
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<b>Form 1449 (Modified)</b>  <b>Information Disclosure Statement By Applicant</b>  (Use Several Sheets if Necessary)	Atty Docket No. HASLP003 Applicant: Mayes and Tyler Filing Date November 17, 1997	Application No. 09/308,166 RECEIVED SEP 13 2000 TC 2700 MAIL ROOM Group UNASSIGNED
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**U.S. Patent Documents**

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
<i>SP</i>	A	5,574,961	11/12/96	Edelstein et al.	425	548	1/16/85
	B						
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**Foreign Patent or Published Foreign Patent Application**

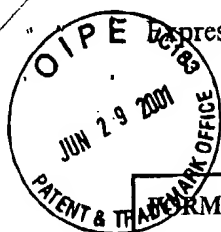
Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
<i>SP</i>	J	EP0586052B1	5/7/97	EPO	HOIF	1/37	X	
	K							
	L							
	M							
	N							

**Other Documents**

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>SP</i>	O	Hong J. et al: "Granular Magnetic Cobalt Metal/Polymer Thin Film System," <u>IEEE Transactions on Magnetics</u> , Vol. 32, No. 5, Pages 4475-4477, September 1996
	P	
	Q	
Examiner	<i>[Signature]</i> Date Considered 2-24-2004	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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SHEET 1 OF 1

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## U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
pu	A21	5,505,996	04-09-96	Nagayama			04-11-95
	A22	5,690,903	11-25-97	Hainfeld			05-30-95
	A23	5,766,764	06-16-98	Olli <i>et al.</i>			06-04-96
	A24	5,843,569	12-01-98	Kaitsu <i>et al.</i>			02-24-97

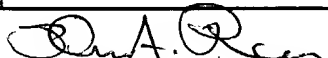
## FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)

## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
pu	C1	Meldrum <i>et al.</i> , "Magnetoferritin: In Vitro Synthesis of a Novel Magnetic Protein", Science, Vol. 257, July 24, 1992, pgs. 522-523.							
EXAMINER	B. A. R.				DATE CONSIDERED 2-24-2004				

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FORM PTO - 1449  SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT				ATTORNEY DOCKET NO.: NNM-001 (7596/1)  APPLICANTS: Mayes and Tyler  SERIAL NO.: 09/308,166  FILING DATE: June 25, 1999  GROUP: 2754					
U.S. PATENT DOCUMENTS									
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FOREIGN PATENT DOCUMENTS									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
OTHER ART, JOURNAL ARTICLES, ETC.									
EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)								
Su	C2	Ford <i>et al.</i> , "Ferritin: Design and Formation of an Iron-Storage Molecule," Phil. Trans. R. Soc. Lond. Vol. B304, No. 1121, 2/13/84, pgs. 551-565.							
	C3	Wardeska <i>et al.</i> , "Metal Ion Complexes of Apoferritin," The Journal of Biological Chemistry, Vol. 261, No. 15, 5/25/86, pgs. 6677-6683.							
	C4	Stefanini <i>et al.</i> , "On the Mechanism of Horse Spleen Apoferritin Assembly: A Sedimentation Velocity and Circular Dichroism Study," Biochemistry, Vol. 26, No. 7, 4/7/87, pgs. 1831-1837.							
	C5	Price <i>et al.</i> , "Binding of Beryllium and Other Divalent Metal Ions," The Journal of Biological Chemistry, Vol. 258, No. 18, 9/25/83, pgs. 10873-10880.							
	C6	Treffry <i>et al.</i> , "Spectroscopic Studies on the Binding of Iron, Terbium, and Zinc by Apoferritin," Journal of Inorganic Biochemistry, Vol. 21, No. 1 (1984), pgs. 9-20.							
EXAMINER					DATE CONSIDERED				
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FORM PTO-1449

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ATTORNEY DOCKET NO.: NNM-001

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APPLICANTS: Mayes *et al.*

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SERIAL NO.: 09/308,166

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FILING DATE: June 25, 1999 GROUP: 2754

## U.S. PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
Bu	A31	3,951,904	04/20/76	Tomonaga	260	40 R	
	A32	4,009,111	02/22/77	Tamai <i>et al.</i>	252	62.55	
	A33	4,425,261	01/10/84	Stenius <i>et al.</i>	502	339	
	A34	4,452,773	06/05/84	Molday	424	1.1	
	A35	4,454,234	06/12/84	Czerlinski	436	526	
	A36	4,480,256	10/30/84	Wren	343	909	
	A37	5,062,991	11/05/91	Siiman <i>et al.</i>	252	315.2	
	A38	5,147,841	09/15/92	Wilcoxon	502	173	
	A39	5,248,589	09/28/93	Bose <i>et al.</i>	435	2	
	A40	5,262,176	11/16/93	Palmacci <i>et al.</i>	424	9	
	A41	5,443,813	08/22/95	Hainfeld	424	1.17	
	A42	5,697,902	12/16/97	Goldenberg	604	49	
	A43	5,916,539	06/29/99	Pilgrimm	424	9.322	
	A44	6,054,495	04/25/00	Markowitz <i>et al.</i>	516	97	
	A45	6,103,868	08/15/00	Heath <i>et al.</i>	528	482	
	A46	6,254,662 B1	07/03/01	Murray <i>et al.</i>	75	348	
V	A47	6,262,129 B1	07/17/01	Murray <i>et al.</i>	516	33	

## FOREIGN PATENT DOCUMENTS

EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG Y/N
Bu	B7	89/11154	11/16/89	WO					Y
	B8	98/29535	07/09/98	WO					Y
	B9	00/45171	08/06/00	WO					Y
	B10	00/71169 A2	11/30/00	WO					Y
	B11	01/74406 A2	10/11/01	WO					Y
V	B12	1 186 659 A1	03/13/02	EP					Y



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B13	0 049 770	04/21/82	EP					Y
B14	0 686 448 A2	12/13/95	EP					Y
B15	42 44 354 A1	07/01/93	DE					Y

## OTHER ART, JOURNAL ARTICLES, ETC.

EXAM. INIT.	OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)	
qu	C15	Huang <i>et al.</i> , "Construction of a Ferritin Reactor: An Efficient Means for Trapping Various Heavy Metal Ions in Flowing Seawater", Journal of Protein Chemistry, Vol. 19, No. 6, 2000.
	C16	Kenji <i>et al.</i> , "Nanometer-Size Structures Fabricated by Bio-Nano-Process", Abstract, Meiji University.
	C17	Li <i>et al.</i> , "Growth of Single-Walled Carbon Nanotubes From Discrete Catalytic Nanoparticles of Various Sizes", J. Phys. Chem. B, 105, pp. 11424-11431, 2001.
	C18	Warne <i>et al.</i> , "Self Assembled Nanoparticulate Co : Pt for Data Storage Applications", IEEE Transactions on Magnetics, Vol. 36, No. 5, September 2000.
✓	C19	Yamashita, "Fabrication of a Two-Dimensional Array of Nano-Particles Using Ferritin Molecule", Thin Solid Films, 393, pp. 12-18, 2001.
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